In the Claims:

Please amend claims 1-3 and 7-20 as follows:

1. **(Once Amended)** A transport assembly for moving an object, comprising:

sensor units and actuator units arranged on the transport assembly; said sensor units for providing positional information of the object; said actuator units for moving the object relative to the transport assembly;

computational agents coupled said sensor units and said actuator units; each computational agent receiving positional information from at least one sensor unit and computing a desired actuator response for at least one actuator unit in a spatially localized region of control on the transport assembly; and

a global controller, coupled to said computational agents, for receiving aggregate operating characteristics from, and delivering global constraints to, said computational agents;

wherein said computational agents are grouped into a plurality of local neighborhoods; the computational agents in each local neighborhood being: (a) coupled to sensors and actuators that are located physically proximate to each other on the transport assembly; and (b) communicatively coupled to each other for directly communicating their desired actuator responses to each other; and

wherein each of said computational agents use (i) the global constraints delivered by the global controller, (ii) the desired actuator responses received from the computational agents in their local neighborhood, and (iii) the positional information from the at least one sensor unit in its spatially localized region of control, to determine

adjustments to the at least one actuator unit in its spatially localized region of control to move the object along the transport assembly.

2. **(Once Amended)** The transport assembly according to claim 1, further comprising a lookup table for communicating the global constraints to said computational agents.

3. **(Once Amended)** The transport assembly according to claim 1, further comprising a filter unit for computing the aggregate operating characteristics after receiving the positional information from the computational units.

7. **(Once Amended)** The transport assembly according to claim 1, wherein sizes of the local neighborhoods of computational agents is determined adaptively.

8. **(Once Amended)** The transport assembly according to claim 1, wherein sizes of the local neighborhoods of computational agents are fixed.

9. **(Once Amended)** The transport assembly according to claim 1, wherein said computational agents compute a global response using the global constraints.

10. **(Once Amended)** The transport assembly according to claim 9, wherein each computational agent computes the desired actuator response using the positional information from the at least one sensor unit in its spatially localized region of control on the transport assembly.

11. **(Once Amended)** The transport assembly according to claim 10, wherein said computational agents determine whether spatially localized groupings of sensor and actuator units function properly.

12. (**Once Amended**) The transport assembly according to claim 1, wherein said computational agents rank the global response and the desired actuator response in importance using weights.

13. (**Once Amended**) The transport assembly according to claim 12, wherein said computational agents adaptively determine values for the weights.

14. (**Once Amended**) The transport assembly according to claim 1, wherein said computational agents and said global controller are organized hierarchically.

15. (**Once Amended**) In a transport assembly having sensors, actuators and a controller, the controller having computational agents and a global controller for controlling movement of an object on the transport assembly, a method for operating each of the computational agents, comprising the steps of:

receiving positional information from at least one sensor in a spatially localized region of control on the transport assembly;

computing a desired actuator response for at least one actuator in its spatially localized region of control on the transport assembly;

computing a global actuator response for detected global constraints from the global controller;

receiving desired actuator responses from other computational agents in a local neighborhood of computational agents to which it is grouped; the computational agents grouped in each local neighborhood being coupled to sensors and actuators that are located physically proximate to each other on the transport assembly;

computing an actuator response using (i) the computed local actuator response received from computational agents in its local neighborhood of computational agents, (ii) the positional information from the at least one sensor in its spatially localized region of control, and (iii) the computed global actuator response; and

applying the actuator response to the at least one actuator in its spatially localized region of control on the transport assembly.

16. (**Once Amended**) The method according to claim 15, wherein the computed actuator response compensates for malfunctioning actuators.

17. (**Once Amended**) The method according to claim 16, wherein the desired actuator response is computed using accumulated positional information from the at least one senor in its spatially localized region of control on the transport assembly.

18. (**Once Amended**) The method according to claim 15, wherein the size of the local neighborhoods of computational agents is determined adaptively.

19. (**Once Amended**) The method according to claim 16, further comprising the step of determining whether spatially localized groupings of sensors and actuators function properly.

20. (**Once Amended**) The method according to claim 16, wherein said step of computing a desired actuator response further comprises the step of retrieving the global constraints from a lookup table.